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# Fitting Engagement Into a Nomological Network: The Relationship of Engagement to Leadership and Personality

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## Abstract

Engagement is an emerging job attitude that has been theoretically linked to both leadership and personality variables as well as important work outcomes. However, given the variations in construct definitions of engagement as well as limited existing empirical research, the authors empirically examined the nomological network of multiple measures of engagement based on Schaufeli's three-factor engagement, Shirom's vigor, and Britt's one-factor engagement. Using data from an online survey of 382 working professionals, the authors conducted a series of hierarchical regression analyses and structural equation modeling to test the hypotheses. Results indicate strong relationships between engagement measures and personality (especially positive affect) and weaker relationships between engagement and leadership. Furthermore, multiple measures of engagement demonstrated significant relationships with the important work outcomes of turnover intentions, job satisfaction, and affective commitment. This research contributes to the literature on engagement by simultaneously examining multiple conceptualizations and measurements of work engagement and demonstrating leverage points for leaders to influence the state-like construct of engagement. Results suggested that engagement is related to important organizational outcomes and that engagement mediates the relationship between personality and organizational outcomes. Implications and suggestions for practice and future research are provided.

## Keywords

job engagement, transformational leadership, personality, positive affect

Work engagement is an emerging concept that is becoming increasingly popular with both academics and practitioners as a way to assess employee satisfaction, enthusiasm, and commitment. The construct of engagement was first introduced into the work domain by Kahn (1990), who defined work engagement as, “. . . the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances” (p. 694). Since Kahn's introduction of the construct, several organizational theorists have expanded out his ideas and conceptualized multiple approaches as well as measures of engagement, most notably Schaufeli's three-factor engagement, Shirom's vigor, and Britt's one-factor engagement. Given the relative newness of the construct, authors have not only struggled to solidify around a single construct definition and measurement of engagement but have also failed to pinpoint the relationship of engagement within the larger nomological network of organizational variables, such as leadership, personality, and work outcomes.

The purpose of the current study is to clarify the interrelationships of these multiple conceptualizations and measures of work engagement within the nomological network. Specifically, building on prior research, we put forth theoretical rationale and hypotheses and then examined the antecedents of personality, leadership, and perceived organizational support and outcomes of turnover intentions, affective commitment, and job satisfaction. By examining the theoretical and empirical relationships between leadership, personality, engagement, and other correlates and consequences, we hope to clarify the picture of where and how engagement fits in that network. Some of the links have been examined previously (i.e., engagement and job satisfaction),

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but others have not been examined and thus contribute to the literature by bringing those relationships to light (i.e., the link between personality and engagement). Perhaps the largest contribution of this research is the direct comparison of three competing measures of engagement, which we describe next.

With regard to construct definition and measurement, the most popular of the three engagement models in the academic literature is the Schaufeli three-factor model of engagement (Christian & Slaughter, 2007). Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002) defined engagement as a persistent and positive affective-motivational state of fulfillment in employees, characterized by vigor, dedication, and absorption. According to Schaufeli et al. (2002) *vigor* is seen as high energy, resilience, a willingness to invest effort on the job, ability to not be easily fatigued, and persistence in the face of difficulties. *Dedication* is characterized by strong involvement in work, enthusiasm, and a sense of pride and inspiration. Last, *absorption* is characterized by a pleasant state of being immersed in one's work, time passing quickly, and being unable to detach from the job (Schaufeli et al., 2002).

Although the Schaufeli model is the most commonly used model, it is not without criticism and some viable alternatives. Shirom (2003) has criticized the Schaufeli model of engagement by suggesting that the vigor component of engagement is the only nonconfounded construct in Schaufeli's three-factor engagement model. Therefore, Shirom expanded the concept of *vigor* to include an individuals' feeling that they possess physical strength, emotional energy, and cognitive liveliness. Given the close nature of the vigor concept to engagement, it is considered to be an alternative conceptualization of job engagement.

The third approach to engagement in the academic literature is from Britt (1999), who defines engagement as feeling responsible for and committed to one's work performance so that a person's performance *matters* to the individual (Britt, 1999; Britt & Bliese, 2003). Responsibility and commitment are derived from a three-part model: prescriptions, events, and identities. This is referred to as the triangle model of responsibility (Britt, 1999; Schlenker, Britt, Pennington, Murphy, & Doherty, 1994). Prescriptions represent the rules of conduct for a given situation (e.g., meeting deadlines) and provide implicit and explicit guidelines for how a situation is expected to be handled. Events are the individual actions that are evaluated while performing prescriptions and fulfilling roles. Identity images represent individually valued roles, qualities, and commitments that are situation specific, meaning that they vary by prescription and event. Given the specificity and individualization of their nature, identities differ by person. As identity combines with increased importance of events and prescriptions, individual level of engagement increases. Furthermore, Britt, Dickinson, Greene, and McKibben (2007) suggest that when people are engaged in their work, they feel a sense of personal responsibility for their work performance and that their performance

influences their identity. Taken together, Schaufeli's three-factor engagement, Shirom's vigor, and Britt's one-factor engagement make up the notable approaches and measures of engagement in the organizational literature to date.

### Engagement and Work Outcomes

As stated, engagement has been theoretically and empirically linked to important work outcomes. Specifically, because of their higher levels of emotional attachment to the organization, we expect that more engaged employees will display higher levels of affective commitment and lower levels of intentions to leave the organization than their less engaged colleagues. Prior empirical evidence has shown a negative relationship between engagement and turnover intentions (Hallberg & Schaufeli, 2006; Schaufeli & Bakker, 2004) and a positive relationship between engagement and organizational commitment (Christian & Slaughter, 2007; Hallberg & Schaufeli, 2006; Llorens, Bakker, Schaufeli, & Salanova, 2006).

Another important work outcome that engagement has not yet been empirically linked to is job satisfaction—the extent to which one is content with his or her job. Schaufeli and Salanova (2007) suggested outcomes of engagement such as positive job attitudes and organizational citizenship behaviors, both related to job satisfaction. Workers who are more highly engaged may also exhibit more personal initiative, proactive behavior, and learning motivation. Furthermore, engagement may mediate the relationship between job resources and those positive organizational behaviors (Sonnetag, 2003), resulting in a more satisfied worker. Since work engagement is defined as a positive emotional state, we expect that it will be positively correlated to job satisfaction. Based on prior research and theory regarding the importance of engagement for work outcomes, we established our first hypothesis.

*Hypothesis 1:* Work engagement will be positively related to work outcomes of affective commitment and job satisfaction and negatively related to intentions to leave.

Understanding the relationships of engagement with work outcomes is only the first piece of the puzzle. Our primary goal with this article was to clearly delineate the positioning of work engagement in the larger nomological network of both antecedent and outcome variables in order to further our understanding and advancement of the construct. After an introduction to these concepts, we will present both theoretical and empirical evidence testing a series of hypotheses for where engagement fits in relation to individual difference variables of the five-factor personality and trait positive affect (PA), transformational leadership, and perceived organizational support, as well as how engagement mediates

the effects of these antecedents on the important work outcomes discussed above.

### *Personality and Engagement*

Personality measures are relatively stable over time and well-constructed personality measures are valid predictors of work performance, especially contextual performance (Hogan, Hogan, & Roberts, 1996). For the purpose of this research, the five-factor model and measure of personality were examined. The five-factor taxonomy of personality is a systematic framework for distinguishing and naming different types and characteristics of people and it provides five replicable, broad dimensions of personality (John & Srivastava, 1999). The five-factor model of personality makes three basic claims. First, normal personality can be characterized in terms of the following five broad factors: Extraversion (sociability, assertiveness, activity, adventurousness), Neuroticism (irritability, security, emotionality), Agreeableness (warmth, affection, gentleness, generosity, modesty, humility), Conscientiousness (orderliness, decisiveness, consistency, reliability, industriousness), and Openness to experience (intellect, imagination, creativity, perceptiveness). Second, many existing measures of personality assess some or all these factors. Last, looking at these five dimensions is a good way to measure personality (Hogan et al., 1996).

Personality has been studied as an important predictor of work outcomes for decades. Examining personality and negative work outcomes, Salgado (2002) found that all factors of the five-factor personality taxonomy predicted employee turnover. Erdheim, Wang, and Zickar (2006) successfully linked the Extraversion to employee-level affective, normative, and continuance commitment at work, and Openness to experience, Conscientiousness, and Neuroticism to continuance commitment. In addition, Meng and Li (2004) linked personality, using the Big Five taxonomy, to organizational commitment and employee job satisfaction. Although interesting and important, we were more interested in the mechanism by which personality affects these important work outcomes. Specifically, we predict that the concept of engagement is an important, thus far missing, link between personality and work outcomes. In other words, employees with certain types of personality are predisposed to be more or less engaged with their work, in turn affecting their levels of job satisfaction, affective commitment, and most important, intentions to leave the organization. In fact, both Shirom (2003) and Macey and Schneider (2008) speculated that individual difference variables such as personality would, in fact, predict engagement (or vigor).

As noted, personality has been theorized as an antecedent to engagement, with some preliminary empirical support. At first, the link between engagement and personality might seem dubious given that engagement is defined as a state. However, anecdotally, we can all probably think of people

we have known who just seemed engaged in their work regardless of the environment. Furthermore, there is strong empirical evidence that trait-based concepts, such as personality, affect peoples' behavior at work (Hogan et al., 1996). Specifically, agreeing with Shirom (2003), we expect that because they are characterized by high levels of activity, energy, and adventurousness; those individuals high in the personality trait of Extraversion will also report higher levels of vigor and absorption in work (i.e., work engagement). Furthermore, we expect individuals who are high in Conscientiousness to report more work engagement, specifically on the dedication facet, because they are consistent, reliable, and industrious. In fact, the little existing previous research has demonstrated preliminary support for the link between engagement and personality. Wefald, Loo, Downey, and Smith (2007) empirically demonstrated a link between all facets of the five-factor personality dimensions and both Schaufeli's engagement and Shirom's vigor. Shrager (2007) also provided evidence that Extraversion and Openness to experience were related to Shirom's vigor.

In addition to the five-factor personality dimensions, we expect that trait PA is an additional individual difference variable that predicts work engagement. Trait "positive affect represents the extent to which a person avows a zest for life" (Watson & Tellegen, 1985, p. 221). Macey and Schneider (2008) speculated that trait-like PA would be very closely tied to traitlike engagement. Although no prior empirical research has examined this relationship, we expect that trait PA will predict state-like engagement (i.e., the three aforementioned engagement measures) given that high-PA individuals are characterized as being alert, attentive, enthusiastic, dedicated, and inspired, among other like descriptions (Watson, Clark, & Tellegen, 1988). Although trait PA is not a facet of the Big Five personality dimensions, it is considered a trait and part of a person's personality and, thus, it is included in our hypothesis, analysis, and discussion under the term *personality*.

Given the above and the lack of previous investigation into potential relationships between traitlike variables and engagement, one of the goals of this research was to help fill that gap in the literature and examine the link between personality and engagement, thus further elucidating the placement of engagement in the nomological network. Therefore, we predict that individual difference variables, specifically Extraversion, Conscientiousness and PA would predict all three measures of engagement, which in turn predicts work outcomes. In other words, the traitlike variable of personality affects important work outcomes through its impact on work engagement.

*Hypothesis 2:* Engagement will mediate the relationship between personality (specifically Extraversion, Conscientiousness, and Positive affect) and the work outcomes of affective commitment, job satisfaction, and turnover intentions.

## Transformational Leadership and Engagement

Similarly to personality, the concept of leadership has a long history and an extensive body of empirical research linking it to important work outcomes. A number of studies, including three meta-analyses, have shown that transformational leadership raises follower level of satisfaction and commitment (Dumdum, Lowe, & Avolio, 2002; Fuller, Patterson, Hester, & Stringer, 1996; Lowe, Kroeck, & Sivasubramaniam, 1996), and decreased intentions to leave have been found to be affected by greater levels of satisfaction and commitment (Elangovan, 2001). Furthermore, a recent meta-analysis found that the effects of transformational leadership are strongest for affective work outcomes (e.g., commitment, satisfaction), whereas more traditional forms of leadership (e.g., transactional, contingency) have larger effects on cognitive-oriented work outcomes (Avolio, Reichard, Hannah, Walumbwa, & Chan, 2009). In summary, leadership is a key organizational variable that influences important work outcomes.

However, the effects of leadership on work outcomes are indirect, that is, leaders influence work outcomes through their influence on followers. As such, we propose follower engagement as an important mediator of the effects of transformational leaders. Echoing Schaufeli and Salanova (2007), who suggested that leadership may be an important antecedent to engagement, and Shirom (2003), who suggested that having leaders who encourage employees to think creatively is an antecedent to vigor, we expect transformational leadership to relate to engagement. Specifically, aspects of transformational leadership have been theoretically and statistically related to state engagement. Transformational leaders stimulate and inspire followers for extraordinary outcomes. They help followers grow and develop into leaders by responding to individual followers' needs by empowering them and by aligning the goals of the individual followers, the leader, the group, and the larger organization (Bass & Riggio, 2006). Both concepts encompass conceptualizations of investment of identity in the organization and work, passion for work, the capacity to think independently, develop new ideas, and challenge convention (Macey & Schneider, 2008).

In a recent study, Zhu, Avolio, and Walumbwa (2007) found that leader-rated follower characteristics moderated the positive relationship between transformational leadership and follower engagement such that as leaders rated their followers more positively, the relationship between transformational leadership and engagement was stronger. Zhu et al. (2007) also found a significant positive direct relationship between transformational leadership and engagement ( $r = .58, p < .01$ ). Although the theoretical linkages appear strong, we are not aware of any additional published empirical research linking leadership to engagement. Therefore,

with Hypothesis 3, we predict that transformational leadership as reported by followers would positively relate to engagement. Furthermore, we expect engagement to mediate the impact of transformational leadership on work outcomes.

*Hypothesis 3:* Engagement will mediate the relationship between transformational leadership and the work outcomes of affective commitment, job satisfaction, and turnover intentions.

## Perceived Organizational Support and Engagement

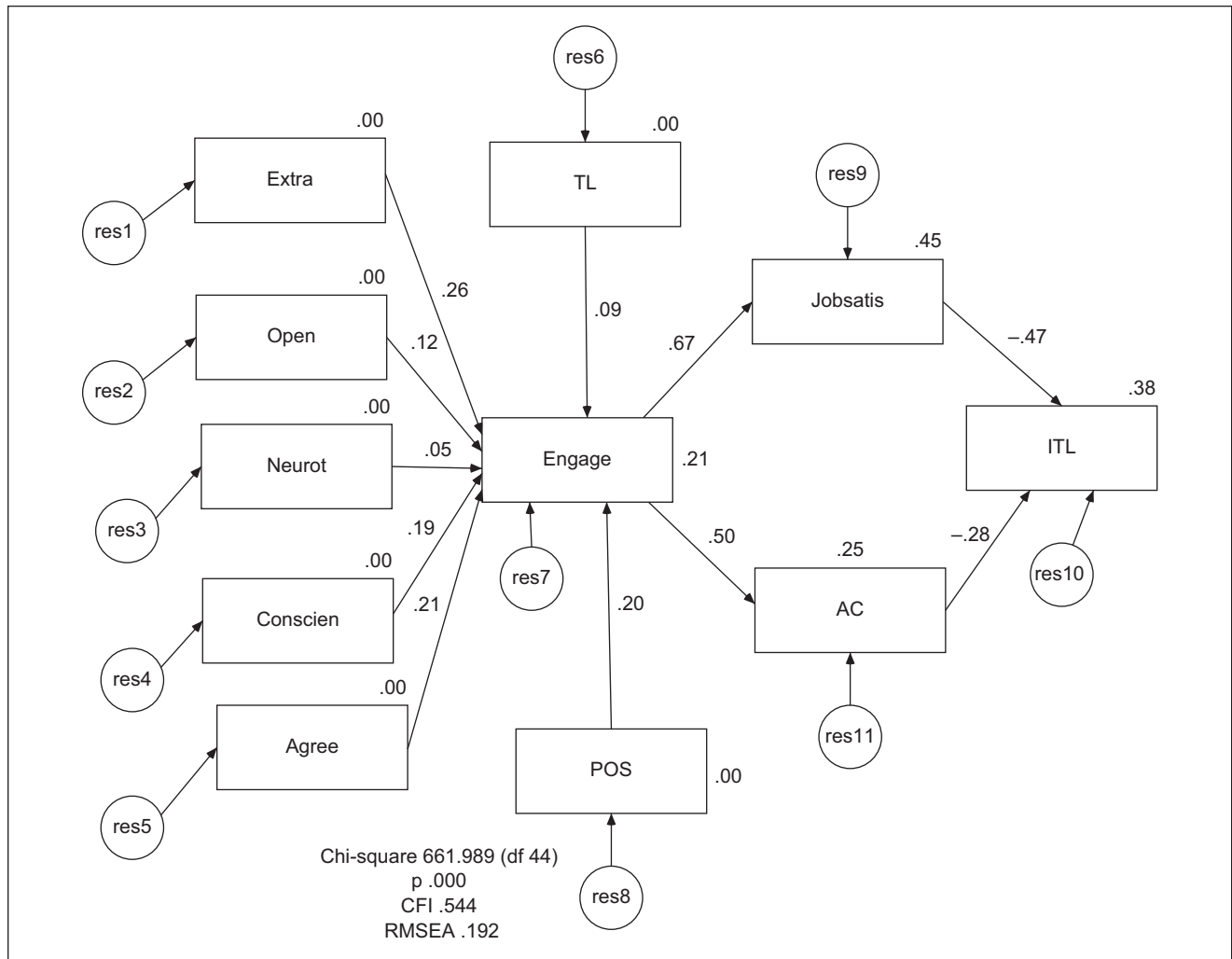
Beyond personality and leadership variables lies the relationship of the organization itself to an individual's level of work engagement. Specifically, we argue that perceived organizational support, or employees' "beliefs concerning the extent to which the organization values their contribution and cares about their well-being" (Eisenberger, Huntington, Hutchison, & Sowa, 1986, p. 501), is an important antecedent to work engagement. In a recent meta-analysis on the construct, Riggie, Edmundson, and Hansen (2009) found that perceived organizational support had a strong positive effect on job satisfaction and organizational commitment and a strong negative effect on intentions to leave. We argue that work engagement mediates the impact of perceived organizational support on important work outcomes. Supporting our reasoning, both Schaufeli and Shirom have stated that important antecedents of work engagement are social support and managerial support (Schaufeli & Bakker, 2004; Shirom, 2003). Furthermore, Saks (2006) empirically demonstrated perceived organizational support to be a predictor of job and organizational engagement. Therefore, we expect perceived organizational support to predict work engagement.

*Hypothesis 4:* Engagement mediates the relationship between perceived organizational and the work outcomes of affective commitment, job satisfaction, and turnover intentions.

## Nomological Network

As noted previously, our primary goal with this research was to further delineate the positioning of job engagement in the larger nomological network of both antecedent and outcome variables to further our understanding and advancement of the construct. As such, we examined a model with personality, leadership, and perceived organizational support predicting engagement, which we predict mediates the impact on job satisfaction, affective commitment, and ultimately, intentions to leave (as described above and shown in Figure 1). More specifically, we predict that personality (Extraversion, Conscientiousness, Neuroticism, Openness to experience, and Agreeableness), transformational leadership,





**Figure 1.** Hypothesized model of research variables

*Note.* Extra = extraversion; Open = openness; Neurot = Neuroticism; Conscien = conscientiousness; Agree = agreeableness; TL = transformational leadership; Engage = engagement (Schaufeli); POS = perceived organizational support; Jobsatis = job satisfaction; AC = affective commitment; ITL = intentions to leave.

and perceived organizational support will have a direct effect on engagement. In turn, engagement will have a direct effect on job satisfaction and affective commitment and those two variables will have a direct effect on turnover intentions. Theoretically, trait variables should predict state variables such as job attitudes (e.g., engagement), and contextual variables (e.g., leadership) should also predict state variables in employees (Macey & Schneider, 2008).

*Research Question 1:* Will a model, with personality, leadership, and perceived organizational support predicting engagement and engagement in turn predicting job satisfaction, affective commitment, and ultimately, intentions to leave, fit the data?

Last, we explored an alternative model, which we predict will also have a reasonable fit. Engagement has been considered both a predictor of other job attitudes, such as job satisfaction and affective commitment, and a correlate of those constructs (see Christian & Slaughter, 2007; Harter, Schmidt, & Hayes, 2002; Macey & Schneider, 2008; Schaufeli & Salanova, 2007; Wefald & Downey, 2009). As such, the alternative model predicts that personality and transformational leadership will have a direct effect on engagement, job satisfaction, and affective commitment and those constructs will have direct effects on intentions to leave.

*Research Question 2:* Will an alternative model, with personality and transformational leadership having

a direct effect on engagement, job satisfaction, and affective commitment and those constructs having direct effects on intentions to leave, fit the data?

## Method

An online survey that consisted of demographic items, job attitude scales, and a measure of intentions to leave the organization was administered to employees of a large financial institution. After completing an informed consent, the participants completed questions regarding the participants' line of business, department, and direct supervisor. Next, participants complete the job attitude measures as described below. Finally, the last section included the demographic items, which were voluntary as per the request of the organization.

## Participants

A total of 670 employees were identified by the management of the organization and were e-mailed an online survey. With a 57% response rate, participants included 382 employees and managers at a midsized financial institution. Participants were identified by the management of the organization from two lines of business. The gender composition of the sample was evenly split (males = 51.4%). In addition, there was a slightly older skew to the age of the participants with the following age group breakdown: younger than 25 years (1.9%), 25 to 35 years (22.3%), 36 to 45 years (28.3%), 46 to 55 years (33.8%), and older than 55 (12.7%). The same trend followed in terms of organizational tenure with more participants reporting longer tenure categories as follows: less than 1 year (7.7%), 1 to 3 years (17.9%), 4 to 10 years (36.1%), 11 to 19 years (24%), and 20 years or more (14.3%). Nearly half (44.5%) of the participants reported having a college degree (BA/BS) whereas one third (32.9%) reported some college. Finally, 22.2% of the participants self-identified as managers.

## Measures

In this section, we review the previously validated measures of study constructs included in the survey including engagement, personality, trait PA, transformational leadership, perceived organizational support, organizational commitment, job satisfaction, and intentions to leave.

**Engagement.** Engagement was measured with two different, published scales. The first scale was a short version of the Utrecht Work Engagement Scale (UWES) from Schaufeli et al. (2002) called the UWES-9. Participants responded on a 1 (*never*) to 7 (*always, every day*) Likert-type scale to items such as the following: "At my work, I feel that I am bursting with energy" (vigor), "I am proud on the work that I do" (dedication), and "I get carried away when I'm working"

(absorption). The second published engagement scale used was a four-item scale by Britt, Thomas, and Dawson (2006). Sample items included, "I feel responsible for my job performance" and "I am committed to my job" Response options for the two measures of engagement ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Both scales had acceptable reliabilities (Schaufeli engagement,  $\alpha = .93$ ; Britt engagement,  $\alpha = .82$ ), and were therefore aggregated into composite scores.

An alternative measure of engagement was Shirom's (2003) vigor scale, which consists of 12 items on a 7-point Likert-type scale (physical strength: five items, emotional energy: four items, and cognitive liveliness: three items). Sample items included the following: "I feel I have physical strength" (physical strength: five items), "I feel able to show warmth to others" (emotional energy: four items), and "I feel I can think rapidly" (cognitive liveliness: three items). Coefficient alphas were all above the acceptable limit (physical strength  $\alpha = .93$ , cognitive liveliness  $\alpha = .81$ , emotional energy  $\alpha = .91$ ) providing support for aggregation into composite scales.

**Big Five personality.** Personality was measured using John and Srivastava (1999) 44-item Big Five Index measure of the Big Five personality factors (Extraversion, Conscientiousness, Emotional Stability, Agreeableness, and Openness to Experience). John and Srivastava (1999) reported reliabilities ranging from .75 to .90 for the five subscales. The directions of the survey asked participants if they agree or disagree whether they see themselves as someone who, for example, is talkative, tends to find fault with others, does a thorough job, is inventive, and is reserved. Items were measured using a 5-point Likert-type scale (1 = *very slightly or not at all* and 5 = *extremely*). Given adequate reliability of the five subscales ( $\alpha$ s range from .79 to .81), each were aggregated into a scale score.

**Positive affect.** Positive affect was measured using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The 10-item scale asks participants to indicate the extent to which they generally feel like certain words such as *energetic*, *full of pep*, and *vigorous*. The general PANAS scale has been reported to be reliable with coefficient  $\alpha$ s of .88 for PA and test-retest correlations of .68 for PA 8 weeks apart from demonstrating its trait-like nature (Watson et al., 1988). We intentionally used "in general" in the directions because the focus of this research was to assess trait affect as opposed to state affect. Sample words include "interested" and "excited." Items were measured using a 5-point Likert-type scale (1 = *very slightly or not at all* and 5 = *extremely*). Given adequate reliability ( $\alpha = .90$ ), the PA items were aggregated into an overall scale score reflecting trait PA.

**Transformational leadership.** Transformational leadership was measured using a short measure of transformational leadership called the Global Transformational Leadership

scale (GTL; Carless, Wearing, & Mann, 2000). Seven items were measured using a 5-point Likert-type scale (1 = *strongly disagree* and 5 = *strongly agree*). Sample items include, "My supervisor communicates a clear and positive vision of the future" and "My supervisor gives encouragement and recognition to staff." The GTL has shown strong convergent validity with other established measures of transformational leadership such as the Multifactor Leadership Questionnaire and the Leadership Practices Inventory. The correlations between the GTL and the Multifactor Leadership Questionnaire and Leadership Practices Inventory range from .76 to .88 with a mean of .83 and a standard deviation of .04 (Carless et al., 2000). Carless et al. (2000) found a coefficient alpha (Cronbach's  $\alpha$ ) of .93 suggesting that the GTL is a reliable measure. In the current study, reliability was also strong ( $\alpha = .95$ ) allowing us to create an overall composite of transformational leadership.

**Perceived organizational support.** Perceived organizational support was measured using items from Eisenberger et al.'s (1986) scale. The original scale reported reliability (Cronbach's  $\alpha$ ) of .97 (Eisenberger et al., 1986). This scale had eight items (with four reverse-coded) measured on a 5-point Likert-type scale (1 = *strongly disagree* and 5 = *strongly agree*). Sample items include the following: "My organization really cares about my well-being" and "Even if I did the best job possible, the organization would fail to notice" (reversed).

**Organizational commitment.** Affective organizational commitment was measured using a shortened version of an organizational commitment scale from Allen and Meyer (1990), with a total of 12 items. A sample item is as follows: "This organization has a great deal of personal meaning for me." Response options for the organizational commitment measure ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Given the strong reliability coefficient ( $\alpha = .88$ ), these items were aggregated into a single-scale score reflecting affective commitment.

**Job satisfaction.** Job satisfaction was measured using five questions from Brayfield and Rothe's (1951) scale with response options ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Brayfield and Rothe (1951) reported an odd/even product moment reliability of .77. In this research, the coefficient alpha was .84 demonstrating adequate reliability. Sample items assessing job satisfaction are, "I feel fairly well satisfied with my present job" and "Each day of work seems like it will never end" (reversed).

**Intent to leave.** Finally, intent to leave was measured using a combination of Keller's (1984) Intent to Leave Scale and Blau and Holliday's (2006) scale. This scale had eight items measured on a 5-point Likert-type scale (1 = *strongly disagree* and 5 = *strongly agree*). Sample items include, "I intend to leave the banking profession as soon as possible" and "I expect to leave for another company within the next year." Given the strong coefficient alpha (.92), the items were

aggregated into a single-scale score reflecting overall intent to leave.

## Results

The data were first examined using visual scans of data plots, means, standard deviations, skew, kurtosis, and scale minimums and maximums. The data were examined for outliers, missing data, and other abnormalities and none were found. The means and standard deviations were calculated (see Table 1) and then various mediated regressions were performed to examine the hypotheses. Structural equation modeling was also used to examine the relationships between the variables as well as to test the research questions regarding how they all fit together. We first established the fit of the measurement model on which all subsequent model tests were based. The proposed measurement model, specifying 11 latent variables, provided a reasonable fit to the data,  $\chi^2(3265) = 6473.61, p < .01$ ; comparative fit index (CFI) = .82; root mean square error of approximation (RMSEA) = .05. In comparison, the null model was a very poor fit with the data,  $\chi^2(3403) = 21021.61, p < .01$ ; CFI = .0; RMSEA = .12. A one-factor model was also tested for further comparison and it was also a poor fit with the data,  $\chi^2(3320) = 14725.24, p < .01$ ; CFI = .35; RMSEA = 1.00.

In Hypothesis 1, we predicted that work engagement would be positively related to work outcomes of affective commitment and job satisfaction and negatively related to intentions to leave. Based on bivariate correlation analyses, all the measures of engagement were positively and statistically significantly related to job satisfaction ( $r_s = .352$  to  $.701, p < .01$ ) and affective commitment ( $r_s = .215$  to  $.525, p < .01$ ) and negatively and statistically significantly related to intentions to leave ( $r_s = -.213$  to  $-.475, p < .01$ ). Taken together, results support Hypothesis 1 regarding the relationships between all three measures of engagement and work outcomes. Furthermore, the Schaufeli measure of engagement had the strongest correlations with all three work outcome measures followed by the Britt measure of engagement.

In Hypothesis 2, we predicted that engagement would mediate the relationship between personality (especially Extraversion, Conscientiousness and PA) on the work outcomes of affective commitment, job satisfaction, and turnover intentions. To test this hypothesis, we implemented the Baron and Kenny (1986) approach through a series of mediated regression analyses using each of the engagement measures as a mediator: (a) the Schaufeli measure of engagement, (b) the Britt measure of engagement, and (c) the Shirom measure of vigor.

First, based on the Schaufeli engagement measure, we found support for full mediation of personality effects on intention to leave through engagement. Specifically, when personality variables were originally entered into the regression equation, they were significantly related to intentions



**Table 1.** Means, Standard Deviations, Correlations, and Reliabilities (Cronbach's  $\alpha$ )

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Manager, 1 = yes	—																				
2. Gender, 1 = male	.157**	—																			
3. Age	-.132*	.035	—																		
4. Education	-.162**	-.290**	-.138**	—																	
5. Tenure	-.178**	.147**	.467**	-.224**	—																
6. Perceived organizational support	-.282**	.038	-.025	.038	.005	(.91)															
7. Engagement	-.273**	.074	.129*	-.047	.095	.314**	(.93)														
8. Job satisfaction	-.208**	.071	.153**	-.029	.137**	.446**	.701**	(.84)													
9. Engagement Britt	-.223**	.108*	.047	-.013	.081	.198**	.585**	.464**	(.82)												
10. Vigor physical strength	-.243**	-.072	.018	.049	-.014	.187**	.656**	.455**	.404**	(.93)											
11. Vigor cognitive liveliness	-.255**	-.212**	-.042	.086	-.030	.242**	.473**	.374**	.295**	.601**	(.81)										
12. Vigor emotional energy	-.058	.189**	.005	.056	.025	.190**	.446**	.352**	.388**	.455**	.389**	(.91)									
13. Extraversion	-.225**	.013	-.094	.065	-.120*	.155**	.388**	.208**	.284**	.492**	.355**	.291**	(.85)								
14. Agreeableness	-.057	.106*	.029	-.008	-.057	.251**	.399**	.350**	.358**	.397**	.232**	.485**	.253**	(.79)							
15. Conscientiousness	-.108*	.075	.066	-.088	-.021	.033	.331**	.242**	.328**	.398**	.250**	.230**	.241**	.447**	(.81)						
16. Neuroticism	.120*	.150**	.003	-.074	.146**	-.211**	-.261**	-.234**	-.140**	-.392**	-.321**	-.195**	-.309**	-.454**	-.404**	(.79)					
17. Openness	-.129*	-.255**	.038	.220**	-.206**	.080	.270**	.167**	.145**	.303**	.397**	.182**	.319**	.219**	.174**	-.219**	(.80)				
18. Transformational leadership	-.094	.059	-.018	.102	-.093	.523**	.270**	.295**	.248**	.101*	.188**	.201**	.103*	.264**	.086	-.166**	.103*	(.95)			
19. Positive affect	-.253**	.038	.031	.079	.008	.336**	.692**	.564**	.507**	.651**	.506**	.439**	.476**	.436**	.444**	-.385**	.347**	.274**	(.90)		
20. Affective commitment	-.227**	.171**	.094	-.161**	.242**	.527**	.525**	.579**	.358**	.281**	.215**	.264**	.295**	.282**	.147**	-.100	.117*	.307**	.455**	(.88)	
21. Intentions to leave	.114**	-.074	-.134*	.087	-.172**	-.381**	-.475**	-.621**	-.330**	-.226**	-.289**	-.213**	-.105*	-.250**	-.148**	.113*	-.052	-.203**	-.326**	-.541**	(.92)
Mean	1.78	1.49	3.32	3.77	3.19	3.47	5.24	3.89	4.46	4.74	5.18	5.56	3.31	4.02	4.06	2.47	3.60	3.74	3.77	3.27	1.84
Standard deviation	0.42	0.50	1.03	0.93	1.13	0.75	1.06	0.71	0.56	1.03	1.05	1.07	0.69	0.49	0.50	0.59	0.55	0.94	0.59	0.88	0.82

Note.  $N = 382$ ,  $df = 380$ . Manager (1 = yes, 2 = no); Gender (1 = male, 2 = female).

\* $p < .05$ . \*\* $p < .01$ .

**Table 2.** Impact of Personality Through Schaufeli's Engagement on Intentions to Leave

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of positive affect and Schaufeli's engagement on intentions to leave ( $N = 382$ )				
Step 1			.11	.11**
Positive affect	-.33	-6.73**		
Step 2			.23	.12**
Positive affect	.00	0.07		
Engagement	-.48	-7.63**		
Mediation analysis of Extraversion and Schaufeli's engagement on intentions to leave ( $N = 382$ )				
Step 1			.01	.01*
Extraversion	-.11	-2.05*		
Step 2			.23	.22**
Extraversion	.09	1.92		
Engagement	-.51	-10.48**		
Mediation analysis of Conscientiousness and Schaufeli's engagement on intentions to leave ( $N = 382$ )				
Step 1			.02	.02**
Conscientiousness	-.15	-2.91**		
Step 2			.23	.20**
Conscientiousness	.01	0.22		
Engagement	-.48	-9.99**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

to leave (PA,  $\beta = -.33$ ,  $t = -6.73$ ,  $p < .01$ ; Extraversion,  $\beta = -.11$ ,  $t = -2.05$ ,  $p < .05$ ; and Conscientiousness,  $\beta = -.15$ ,  $t = -2.91$ ,  $p < .01$ ). Following the entry of engagement into the regression equation, the effect of personality on intentions to leave became nonsignificant (PA,  $\beta = .00$ ,  $t = 0.07$ ,  $p = .95$ ; Extraversion,  $\beta = .09$ ,  $t = 1.92$ ,  $p = .06$ ; and Conscientiousness,  $\beta = .01$ ,  $t = 0.22$ ,  $p = .82$ ). Interpreting these results in light of the guidelines outlined by Baron and Kenny (1986) suggests a probable mediation effect of engagement on the personality-intentions-to-leave relationship (see Table 2).

Also based on the Schaufeli measure of engagement (see Tables 3 and 4), the effects of Conscientiousness and Extraversion on both job satisfaction and affective commitment were mediated by Schaufeli's engagement. When Conscientiousness and Extraversion were entered into the first step of the regression, they were significantly related to both job satisfaction (Extraversion,  $\beta = .21$ ,  $t = 4.15$ ,  $p < .01$  and Conscientiousness,  $\beta = .24$ ,  $t = 4.86$ ,  $p < .01$ ) and affective commitment (Extraversion,  $\beta = .30$ ,  $t = 6.02$ ,  $p < .01$  and Conscientiousness,  $\beta = .15$ ,  $t = 2.90$ ,  $p < .01$ ). When engagement was entered into the regression, the effects of Conscientiousness and Extraversion on job satisfaction (Extraversion,  $\beta = -.08$ ,  $t = -1.91$ ,  $p = .06$  and Conscientiousness,  $\beta = .01$ ,  $t = 0.28$ ,  $p = .78$ ) became nonsignificant. The effects of Extraversion on affective commitment were partially mediated by

**Table 3.** Impact of Personality Through Schaufeli's Engagement on Job Satisfaction

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of Conscientiousness and Schaufeli's engagement on job satisfaction ( $N = 382$ )				
Step 1			.06	.06**
Conscientiousness	.24	4.86**		
Step 2			.49	.43**
Conscientiousness	.01	0.28		
Engagement	.70	17.97**		
Mediation analysis of Extraversion and Schaufeli's engagement on job satisfaction ( $N = 382$ )				
Step 1			.04	.04**
Extraversion	.21	4.15**		
Step 2			.50	.45**
Extraversion	-.08	-1.91		
Engagement	.73	18.46**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

**Table 4.** Impact of Personality Through Schaufeli's Engagement on Affective Commitment

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of Extraversion and Schaufeli's engagement on affective commitment ( $N = 382$ )				
Step 1			.09	.09**
Extraversion	.30	6.02**		
Step 2			.29	.20**
Extraversion	.11	2.28*		
Engagement	.48	10.25**		
Mediation analysis of Conscientiousness and Schaufeli's engagement on affective commitment ( $N = 382$ )				
Step 1			.02	.02**
Conscientiousness	.15	2.90**		
Step 2			.28	.25**
Conscientiousness	-.03	-0.65		
Engagement	.54	11.54**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

engagement ( $\beta = .11$ ,  $t = 2.28$ ,  $p < .05$ ) and the effects of Conscientiousness on affective commitment were fully mediated by engagement ( $\beta = -.03$ ,  $t = -0.65$ ,  $p = .52$ ).

Second, we tested the mediation of personality through engagement on work outcomes based on Britt's engagement measure (see Tables 5, 6, and 7). First, the effect of Extraversion on intentions to leave was mediated by Britt's engagement (Step 1,  $\beta = -.11$ ,  $t = -2.05$ ,  $p < .05$ ; Step 2,  $\beta = -.01$ ,  $t = -0.24$ ,  $p = .81$ ) and so was the effect of Conscientiousness on intentions to leave (Step 1,  $\beta = -.15$ ,  $t = -2.91$ ,  $p < .01$ ; Step 2,  $\beta = -.04$ ,  $t = -0.86$ ,  $p = .39$ ). Furthermore, the effect

**Table 5.** Impact of Personality Through Britt's Engagement on Intentions to Leave

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of Extraversion and Britt's engagement on intentions to leave ( $N = 382$ )				
Step 1			.01	.01*
Extraversion	-.11	-2.05*		
Step 2			.11	.10**
Extraversion	-.01	-0.24		
Engagement	-.33	-6.46**		
Mediation analysis of Conscientiousness and Britt's engagement on intentions to leave ( $N = 382$ )				
Step 1			.02	.02**
Conscientiousness	-.15	-2.91**		
Step 2			.11	.09**
Conscientiousness	-.04	-0.86		
Engagement	-.32	-6.15**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.**Table 6.** Impact of Personality Through Britt's Engagement on Job Satisfaction

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of Conscientiousness and Britt's engagement on job satisfaction ( $N = 382$ )				
Step 1			.06	.06**
Conscientiousness	.24	4.86**		
Step 2			.22	.17**
Conscientiousness	.10	2.10*		
Engagement	.43	8.99**		
Mediation analysis of Extraversion and Britt's engagement on job satisfaction ( $N = 382$ )				
Step 1			.04	.04**
Extraversion	.21	4.15**		
Step 2			.22	.18**
Extraversion	.08	1.76		
Engagement	.44	9.31**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

of Conscientiousness on job satisfaction was partially mediated by Britt's engagement (Step 1,  $\beta = .24$ ,  $t = 4.86$ ,  $p < .01$ ; Step 2,  $\beta = .10$ ,  $t = 2.10$ ,  $p < .05$ ). The effect of Extraversion on job satisfaction was mediated by Britt's engagement (Step 1,  $\beta = .21$ ,  $t = 4.15$ ,  $p < .01$ ; Step 2,  $\beta = .08$ ,  $t = 1.76$ ,  $p = .08$ ). Finally, the effect of Conscientiousness on affective commitment was mediated by Britt's engagement (Step 1,  $\beta = .15$ ,  $t = 2.90$ ,  $p < .01$ ; Step 2,  $\beta = .03$ ,  $t = 0.66$ ,  $p = .51$ ).

Finally, we tested the mediation effects predicted in Hypothesis 2 based on the Shirom measure of vigor (see Tables 8, 9, and 10). Results indicate that the effect of

**Table 7.** Impact of Personality Through Britt's Engagement on Affective Commitment

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of Conscientiousness and Britt's engagement on affective commitment ( $N = 382$ )				
Step 1			.02	.02**
Conscientiousness	.15	2.90**		
Step 2			.13	.11**
Conscientiousness	.03	0.66		
Engagement	.35	6.84**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.**Table 8.** Impact of Personality Through Shirom's Vigor on Intentions to Leave

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of Conscientiousness and vigor on intentions to leave ( $N = 382$ )				
Step 1			.02	.02**
Conscientiousness	-.15	-2.91**		
Step 2			.09	.07**
Conscientiousness	-.05	-0.86		
Vigor	-.27	-5.18**		
Mediation analysis of Extraversion and vigor on intentions to leave ( $N = 382$ )				
Step 1			.01	.01*
Extraversion	-.11	-2.05*		
Step 2			.09	.08**
Extraversion	.05	0.81		
Vigor	-.31	-5.59**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.**Table 9.** Impact of Personality Through Shirom's Vigor on Job Satisfaction

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of Extraversion and vigor on job satisfaction ( $N = 382$ )				
Step 1			.04	.04**
Extraversion	.21	4.15**		
Step 2			.24	.20**
Extraversion	-.04	-0.69		
Vigor	.51	9.96**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

Conscientiousness on intentions to leave was mediated by vigor (Step 1,  $\beta = -.15$ ,  $t = -2.91$ ,  $p < .01$ ; Step 2,  $\beta = -.05$ ,  $t = -0.86$ ,  $p = .39$ ). The effect of Extraversion on intentions

**Table 10.** Impact of Personality Through Shirom's Vigor on Affective Commitment

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of Conscientiousness and vigor on affective commitment ( $N = 382$ )				
Step 1			.02	.02**
Conscientiousness	.15	2.90**		
Step 2			.10	.08**
Conscientiousness	.03	0.63		
Vigor	.31	5.82**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

**Table 11.** Impact of Personality Through Schaufeli's Engagement on Intentions to Leave

Variables	$\beta$	$t$	$R^2$	$\Delta R^2$
Mediation analysis of transformational leadership and Schaufeli's engagement on intentions to leave ( $N = 382$ )				
Step 1			.04	.04**
Transformational leadership	-.20	-4.04**		
Step 2			.23	.19**
Transformational leadership	-.08	-1.72		
Engagement	-.45	-9.69**		

\* $p < .05$ , two-tailed. \*\* $p < .01$ , two-tailed.

to leave was also mediated by vigor (Step 1,  $\beta = -.11$ ,  $t = -2.05$ ,  $p < .05$ ; Step 2,  $\beta = .05$ ,  $t = 0.81$ ,  $p = .42$ ). The effect of Extraversion on job satisfaction was mediated by vigor (Step 1,  $\beta = .21$ ,  $t = 4.15$ ,  $p < .01$ ; Step 2,  $\beta = -.04$ ,  $t = -0.69$ ,  $p = .49$ ). The effect of Conscientiousness on affective commitment was also mediated by vigor (Step 1,  $\beta = .15$ ,  $t = 2.90$ ,  $p < .01$ ; Step 2,  $\beta = .03$ ,  $t = 0.63$ ,  $p = .53$ ). Taken together, results of a series of mediation analyses using multiple measures of engagement indicate strong support for Hypothesis 2 that the effects of personality (Extraversion, Conscientiousness, and PA) are mediated through engagement on work outcomes of turnover intentions, affective commitment, and job satisfaction.

With Hypothesis 3, we predicted that engagement would mediate the relationship between transformational leadership and the work outcomes of affective commitment, job satisfaction, and turnover intentions. Based on mediated regression, results indicate that the effect of transformational leadership on intentions to leave was mediated by Schaufeli's engagement (Step 1,  $\beta = -.20$ ,  $t = -4.04$ ,  $p < .01$ ; Step 2,  $\beta = -.08$ ,  $t = -1.72$ ,  $p = .09$ ; Table 11). Other mediation tests with transformational leadership, engagement, and work outcomes were not significant. Results provide only limited

support for the hypothesis that leadership's effects of work outcomes are mediated through work engagement.

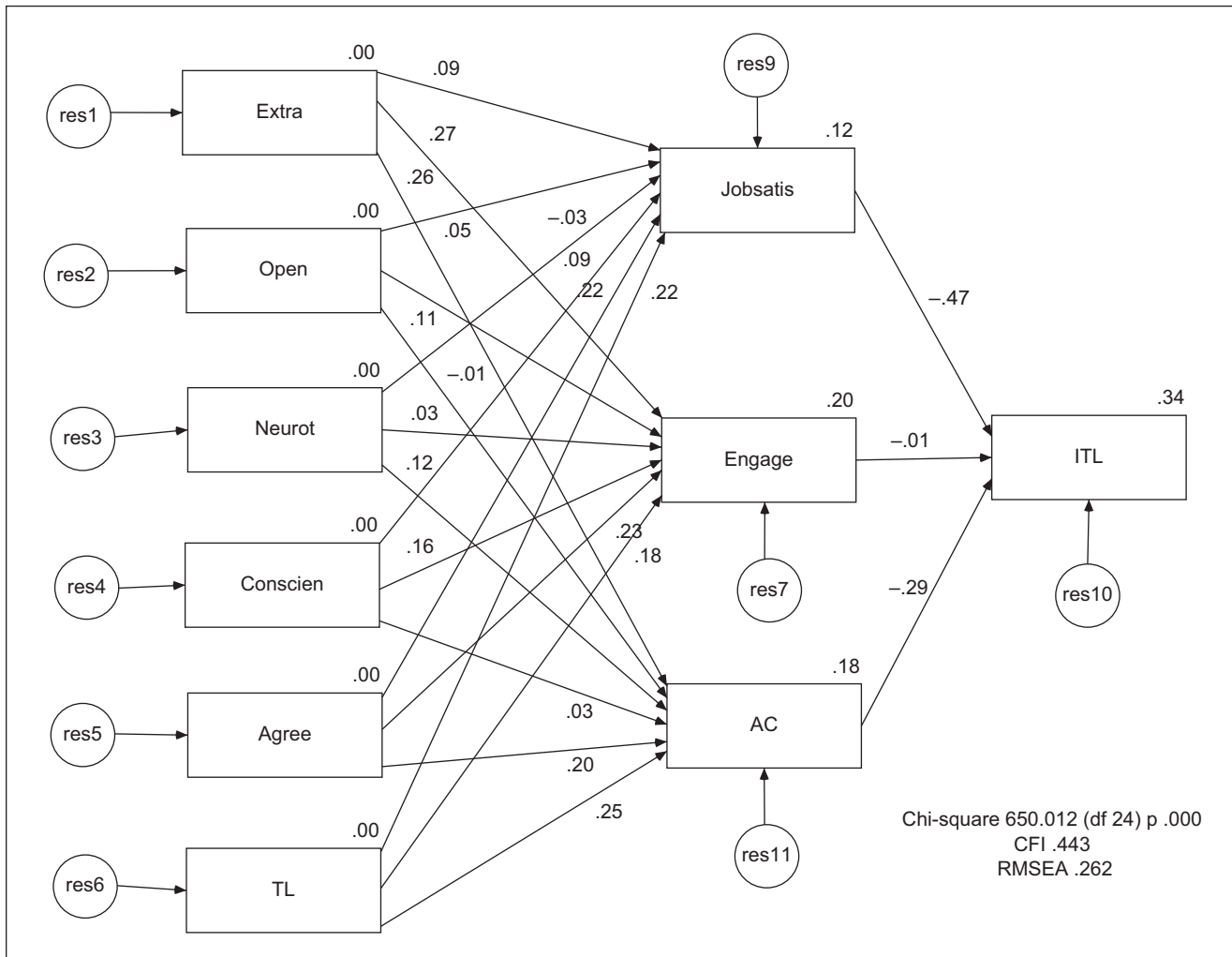
In Hypothesis 4, we expected engagement to mediate the relationship between perceived organizational support and the work outcomes of affective commitment, job satisfaction, and turnover intentions. Mediation analysis based on the Baron and Kenny (1986) recommendations were conducted to test Hypothesis 4; however, all the results failed to support mediation. Therefore, Hypothesis 4 was not supported.

Finally, to provide more of a parsimonious test of the placement of engagement in the nomological network of antecedents and work outcomes, we formulated two research questions and tested two basic models (see Figures 1 and 2). In structural equation modeling, the chi-square statistic was used to compare the various models with each other and not as a method of accepting or rejecting models because of sensitivity to sample size and nonnormal data (Byrne, 2001). Instead, we followed Byrne's (2001) recommendations for assessing model fit indicated by less than .10 for the RMSEA and values exceeding .90 for the normed fit index (NFI) and CFI.

With Research Question 1, we asked if a model with personality facets and leadership predicting engagement, engagement predicting job satisfaction and affective commitment, and those constructs predicting intentions to leave would have a satisfactory fit (engagement as an antecedent to other job attitudes). When job satisfaction and affective commitment were hypothesized to be outcomes of engagement, the model had a poor fit, thus Research Question 1 can be answered in the negative ( $\chi^2 = 66.99$ ,  $df = 44$ ,  $p < .01$ ; NFI = .53; CFI = .54; RMSEA = .19). With Research Question 2, we asked if personality and transformational leadership would have a direct effect on engagement, job satisfaction, and affective commitment and those constructs would have direct effects on intentions to leave (engagement as a correlate of other job attitudes). When job satisfaction and affective commitment were considered to be correlates of engagement this model also had a poor fit, thus Research Question 2 can also be answered in the negative ( $\chi^2 = 650.01$ ,  $df = 24$ ,  $p < .01$ ; NFI = .44; CFI = .44; RMSEA = .26). In a purely exploratory fashion, another model was tested based on the results of the first two models (see Figure 3). This model had a good fit with the data; however, it should be viewed with caution as it was not cross-validated and is purely exploratory ( $\chi^2 = 44.66$ ,  $df = 10$ ,  $p < .01$ ; NFI = .95; CFI = .96; RMSEA = .095).

## Discussion

Given the emerging literature on the concept of job engagement, including the various construct definitions, research investigating the nomological network of antecedents, correlates, and consequences surrounding work engagement is needed to advance our understanding of the concept. Using



**Figure 2.** Second hypothesized model of research variables

Note. Extra = extraversion; Open = openness; Neurot = Neuroticism; Conscien = conscientiousness; Agree = agreeableness; TL = transformational leadership; Engage = engagement (Schaufeli); Jobsatis = job satisfaction; AC = affective commitment; ITL = intentions to leave.

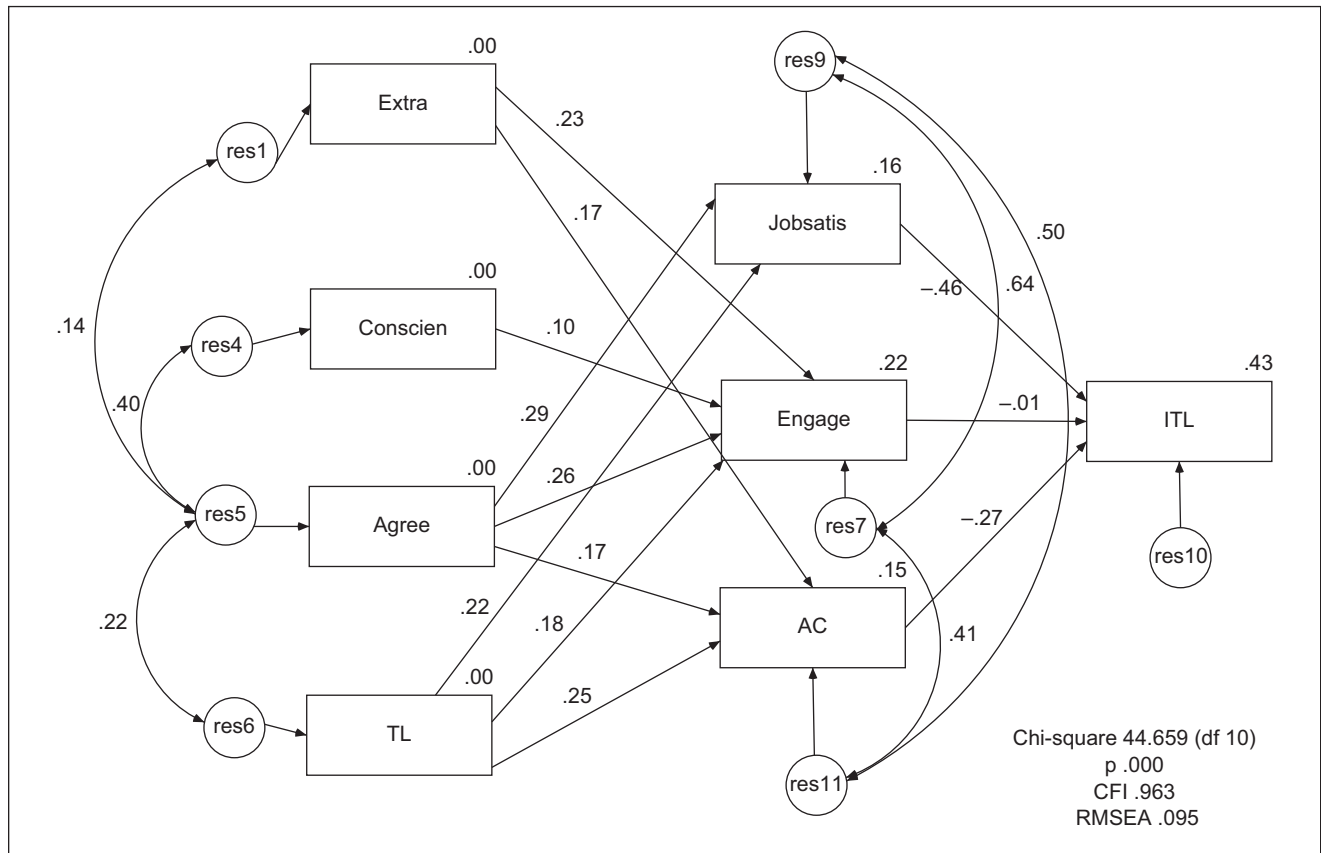
the three major models of work engagement, we tested personality, leadership, and perceived organizational support as antecedents of work engagement—something that has not been jointly examined before. The results clearly suggest that all three concepts are interrelated. Furthermore, we examined the mediating role of engagement of these antecedents on important work outcomes of organizational commitment, job satisfaction, and intentions to leave.

Hypothesis 1 predicting a positive relationship between engagement and work outcomes was supported based on all three measures of work engagement. The relationship between engagement and organizational commitment and intentions to leave are consistent with previous empirical research and validate the field's increasing interest in the construct of work engagement (Christian & Slaughter, 2007; Hallberg & Schaufeli, 2006; Llorens et al., 2006; Schaufeli &

Bakker, 2004). However, the demonstrated empirical relationship between work engagement and job satisfaction had not previously been tested. Therefore, in the current study, we extend the importance of work engagement beyond organizational commitment and intentions to leave to the important outcome of job satisfaction. In the future, other important work outcomes should also be examined such as employee performance to further test the veracity of the importance of the work engagement construct. Arguably, employees with high levels of engagement in their work are more likely to be committed to the organization, satisfied with their job, and perform at higher levels than those who have low levels of work engagement.

Second, we predicted that engagement would mediate the relationship between personality and the work outcomes of affective commitment, job satisfaction, and turnover





**Figure 3.** Exploratory model of research variables

**Note.** Extra = extraversion; Conscien = conscientiousness; Agree = agreeableness; TL = transformational leadership; Engage = engagement (Schaufeli); Jobsatis = job satisfaction; AC = affective commitment; ITL = intentions to leave.

intentions. Results suggested that Schaufeli's measure of engagement fully mediated the relationships of personality (specifically PA, Extraversion, and Conscientiousness) on turnover intentions. Schaufeli's measure of engagement also fully mediated the relationships between personality (in this case Extraversion and Conscientiousness) and both job satisfaction and affective commitment. Further support of Hypothesis 2 was found in the results examining the mediating effects of Britt's measure of engagement. Britt's measure of engagement either partially or fully mediated the relationships between personality and work outcomes. Specifically, Britt's engagement mediated the relationships of Extraversion and intentions to leave, Conscientiousness and intentions to leave, Extraversion and job satisfaction, Conscientiousness and affective commitment, and partially mediated the relationship between Conscientiousness and job satisfaction. Shirom's vigor also mediated some of the relationships between personality and work outcomes. Specifically, vigor mediated the relationship between Conscientiousness and intentions to leave, Extraversion and intentions to leave, Extraversion and job satisfaction, and Conscientiousness and affective commitment.

Taken together, the results of all the mediation analyses using multiple measures of engagement indicate strong support for Hypothesis 2 that the effects of personality (Extraversion, Conscientiousness, and PA) are mediated through engagement on work outcomes of turnover intentions, affective commitment, and job satisfaction. This is an important finding, especially for practitioners seeking to develop engaged organizations, as it suggests that certain personality types are more likely than others to be engaged, and thus, demonstrate fewer intentions to leave, as well as higher levels of affective commitment and job satisfaction. Furthermore, since engagement can have a contagious affect (Bakker, van Emmerik, & Euwema, 2006) it may be important to place employees of such personality traits in less teams as a strategy to increase the team's collective level of engagement.

Previous research has found a relationship between engagement and personality suggesting at least some traitlike aspects to engagement (Wefald et al., 2007). However, unique to the current study, for both engagement measures and vigor, PA emerged as the strongest predictor of work engagement. These results provide an empirical finding for

the theoretical speculations of Macey and Schneider (2008), who stated that traitlike PA would be very closely tied to engagement. To our knowledge, this is the first study to empirically demonstrate the linkage between PA and work engagement. Based on these findings, it appears that employees who are predisposed to higher levels of PA are likely to experience higher levels of work engagement. In terms of practice, organizations selecting for higher levels of job engagement would be wise to include a measure of PA in their selection battery as PA influences important work outcomes through work engagement.

In Hypothesis 3, we examined followers' reports of their direct supervisor's level of transformational leadership and whether the relationship between that and work outcomes would be mediated by various measures of engagement. The results of all these analyses indicated that only Schaufeli's measure of engagement mediated the relationship of transformational leadership and intentions to leave. Other mediation tests with transformational leadership, the various measures of engagement, and work outcomes were not significant and indicated no mediating role of engagement. Previous research has found a link between transformational leadership and engagement; however, personality was not included as a control variable (Zhu et al., 2007). The results provide very limited support for Hypothesis 3 in that the relationship between follower's reports of their leader's levels of transformational leadership and intentions to leave was mediated by Schaufeli's engagement but not Britt's engagement or Shirom's vigor.

These limited findings indicate that, in the current study, personality (especially PA) plays a more important role than leadership. However, this may have been an artifact of the short global measure of transformational leadership that was implemented in the current study. A more specific measure of leadership, perhaps focusing specifically on the leader's provision of resources, might have demonstrated a stronger relationship with work engagement. For example, Christian and Slaughter (2007) showed that job resources are an antecedent of engagement and for some jobs those resources can be influenced by a group's leader. Future experimental research is needed to isolate changes in the level of transformational leadership, as well as additional styles of leadership, and the resulting impact on the various measures of engagement.

Another organizational variable that we investigated was perceived organizational support. Results failed to support Hypothesis 4 in that none of the engagement measures mediated the relationship between perceived organizational support and work outcomes. Perhaps the macro construct of perceived organizational support was too distant from the individual-level constructs of work engagement and personal work outcomes. As stated above, examining more specific/close aspects of leader resources or support might strengthen the linkage between these state-like variables and work

engagement's impact on work outcomes. In other words, the direct support provided by the employee's immediate work group or leader is more important for the individual's work engagement than his or her perceived support at the organizational level. Future research should examine these immediate links to search for additional leverage points on increasing employee engagement and work outcomes.

Perhaps the largest contribution of this article is our emphasis on pinpointing engagement in a nomological network of antecedents and work outcomes. Previous research has waffled between considering engagement an antecedent or a correlate of other job attitudes (Christian & Slaughter, 2007; Harter et al., 2002; Macey & Schneider, 2008; Schaufeli & Salanova, 2007; Wefald & Downey, 2009). The approach of this research was to use structural equation modeling to test some of the speculations made in the literature regarding engagement's place in the nomological network of common job attitudes. Therefore, with Research Questions 1 and 2, we tested two alternative models linking engagement, personality, and leadership. The first model considered engagement an antecedent to other job attitudes and the second model considered engagement a correlate to job attitudes. Although neither model had a good fit with the data, a simplified exploratory model with engagement and job attitudes as correlates had a good fit with the data (see Figure 3). This model demonstrates Schaufeli's engagement to be predicted by only transformational leadership and the limited personality variables Extraversion, Conscientiousness, and Agreeableness. It should be noted that this analysis was purely exploratory and should be considered with caution. However, it does add weight to the idea that trait-like variables and perceptions of leadership by followers predict job attitudes and that those attitudes predict an important organizational outcome—intentions to leave the organization (c.f. Wefald et al., 2007; Zhu et al., 2007). Again, we strongly advocate that future research on engagement focuses to gain fuller understanding of personality variables as well as leadership styles that predict work engagement.

Using three competing models of job engagement, we highlighted with this research the connections between engagement, personality, and leadership and provided evidence for where and how engagement fits into a nomological network of antecedents, correlates, and consequences. Engagement is clearly related to personality (especially PA) and to a lesser extent leadership—more or less so depending on which measure of engagement is used. Although this research did not attempt to assess which measure of engagement is best, the results may provide information for academics and practitioners on which measure of job engagement may suit their individual needs.

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